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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/671,095

09/25/2003

Jong-Shing Guo

412557

6356

30954

7590

02/14/2007

LATHROP & GAGE LC
2345 GRAND AVENUE
SUITE 2800
KANSAS CITY, MO 64108

EXAMINER

SASTRI, SATYA B

ART UNIT

PAPER NUMBER

1713

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/14/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/671,095

Applicant(s)

GUO ET AL.

Examiner

Satya B. Sastri

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11-43, 45, 50-58, 60, 65-72 and 74 is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-18, 22, 23, 25, 26, 50, 51, 55, 65 and 69 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-9, 11-43, 45, 50-58, 60, 65-72 and 74 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Continuation of Disposition of Claims: Claims withdrawn from consideration are 19-21,24,27-43,45,52-54,56-58,60,66-68,70-72,74.

DETAILED ACTION

1. This office action is in response to an amendment filed on 11/14/2006. *Claims 1-9, 11-43, 45, 50-58, 60, 65-72, 74* are now pending in the application. *Claims 19-21, 24, 27-43, 45, 52-54, 56-58, 60, 66-68, 70-72 and 74* are now pending in the application.

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/14/2006 has been entered.

3. In view of the amendment, all previous rejections are withdrawn and new rejections are presented in this office action.

Previously Cited Statutes

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. *Claims 1-9, 11-18, 50, 51* are rejected under 35 U.S.C. 103(a) as being unpatentable over Narimatsu et al. (EP 0530729 A1) in view of Wang (US 6,306,497 B1).

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Prior art to Narimatsu et al. discloses pressure sensitive adhesive obtained by emulsion-polymerizing a monomer mixture comprising alkyl (meth)acrylate monomer and 0.1-10 parts by wt. per 100 parts of monomer mixture, of carboxyl group-containing monomer (page 5). (Meth)acrylate monomers are disclosed in lines 4-9, page 5 while anionic monomers are listed in lines 10-11. Aziridine type crosslinking agents in amounts of 0.01 to 10 parts by wt. are disclosed (abstract, page 5, lines 49-51). Working example 1 on page 8 discloses a copolymer of 23 parts of methylmethacrylate, 73 parts of 2-ethylhexyl acrylate, 2 parts of glycidyl acrylate and 2 parts of acrylic acid (page 8, lines 13-16).). 0.5 part by wt. of polyfunctional aziridinypropionate is employed in this example.

The difference between the prior art and the instant invention is that the prior art does not explicitly suggest the use of pentaerythritol tris[(β -N-aziridiny)propionate] as the crosslinking agent.

The secondary reference to Wang is in an analogous field of PSAs comprising acrylic binders with carboxylic groups and aziridiny crosslinking agents. The reference discloses polyfunctional aziridines such as trimethylol-tris[(β -N-aziridiny)propionate], pentaerythritol tris[(β -N-aziridiny)propionate] etc. functionally equivalent reagents. Of these, pentaerythritol tris[(β -N-aziridiny)propionate] is preferred because of its 100% solubility in water and is suitable for an aqueous adhesive system (col. 4, lines 37-50). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace trimethylol-tris[(β -N-aziridiny)propionate] of Narimatsu et al. by the functionally equivalent pentaerythritol tris[(β -N-aziridiny)propionate], in light of advantages provided by Wang, and thereby obtain the instant invention.

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6. *Claims 22, 23, 25, 26, 55, 69* are rejected under 35 U.S.C. 103(a) as being unpatentable over Narimatsu et al. (EP 0530729 A1) in view of Wang (US 6,306,497 B1) and Phan et al. (US 5,969,032).

The combined teachings of Narimatsu et al. and Wang are presented above in paragraph 5 and are incorporated herein by reference.

The difference between the prior art teachings and the present invention is that the prior art does not teach the specific polymerizable surfactant in the adhesive composition.

The primary reference discloses the use of non-polymerizable surfactants. Secondary reference to Phan et al. is in an analogous field of art and discloses the advantages of reactive surfactants for use in preparing acrylic adhesives as opposed to conventional surfactants used compositions disclosed in the primary reference (column 1, lines 43-63). Reactive surfactant such as an allyl amine salt of alkyl benzene sulfonate with allyl amine salt of dodecylbenzene sulfonate is disclosed as the preferred species for polymerization of acrylic latexes (column 5, lines 14-29). The use of such surfactant allows lower levels of polymerizable surfactants to control the latex particle size and to stabilize the latex particles (abstract). In light of such benefits, it would have been obvious for one of ordinary skill in the art at the time the invention was made to include with allyl amine salt of dodecylbenzene sulfonate as the preferred species of surfactant for polymerization of acrylic latexes of Narimatsu et al. and thereby obtain the present invention.

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7. *Claims 1-5, 6-9, 11-16, 50, 65* are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 59,179,676 ('676, English Translation), in view of Wang (US 6,306,497 B1).

Prior art to '626 concerns adhesive tapes comprising 80-99% (meth)acrylates with 1-20% unsaturated acids and crosslinking with an aziridinyll compound and neutralized by alkali. The specific teaching of 80 parts of 2-ethylhexyl acrylate, 20 parts of ethyl acrylate, 5 parts of acrylic acid and 5 parts of 2-hydroxyethyl acrylate (page 14). '676 clearly discloses polyfunctional aziridine propionate as crosslinking agent (page 12, paragraphs 2-3).

The difference between the prior art and the instant invention is that the prior art does not explicitly suggest the use of pentaerythritol tris[(β -N-aziridinyll)propionate] as the crosslinking agent.

The secondary reference to Wang is in an analogous field of PSAs comprising acrylic binders with carboxylic groups and aziridyl crosslinking agents. The reference discloses polyfunctional aziridines such as trimethylol-tris-[(β -N-aziridinyll)propionate], pentaerythritol tris[(β -N-aziridinyll)propionate] etc. Of these, pentaerythritol tris[(β -N-aziridinyll)propionate] is preferred because of its 100% solubility in water and is suitable for an aqueous adhesive system (col. 4, lines 37-50). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use pentaerythritol tris[(β -N-aziridinyll)propionate] as crosslinking agent, in light of advantages provided by Wang, and thereby obtain the instant invention.

Response to Arguments

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8. Applicants' arguments have been considered but are moot in view of the amendment of the claims.

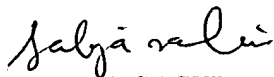
Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Satya Sastri at (571) 272 1112.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached at (571) 272 1114.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


SATYA SASTRI

February 9, 2007


DAVID W. WU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700